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**TO:** Region Engineers  
Region Delivery Engineers  
TSC Delivery Engineers  
Region Development Engineers  
TSC Development Engineers  
TSC Managers  
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Region Construction Engineers  
Region Traffic and Safety Engineers  
TSC Traffic and Safety Engineers  
Region Maintenance Engineers

**FROM:** Larry E. Tibbits  
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John C. Friend  
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**SUBJECT:** Bureau of Highway Instructional Memorandum 2005-04  
Pedestrian Signal Guideline

To ensure consistent treatment of pedestrian indication features at signalized trunkline locations, a Pedestrian Signal Guideline was developed. This guideline should be used as a reference for installing pedestrian indications, the type of operation recommended for the installation (push button versus fixed time), and the use of auxiliary pedestrian signal devices. Auxiliary pedestrian signal devices such as countdown and Audible Pedestrian indications complement traditional pedestrian signals with additional information.

As noted in the Pedestrian Signal Guidelines, the countdown pedestrian signals will be evaluated in a research project to determine when and where these devices should be used. The start of the research project is early summer 2005, with an anticipated completion in mid-summer of 2006. The final product of the research project will be guidelines for the use of such devices.

Specific criteria for Audible Pedestrian devices are outlined in the Pedestrian Signal Guideline. If a request is made for such a device, the guideline can provide guidance and the necessary steps required for approval.

The Pedestrian Signal Guideline is attached to this Informational Memorandum. It is also located on the Traffic and Safety website at [www.mdot.state.mi.us/tands/plans.cfm](http://www.mdot.state.mi.us/tands/plans.cfm) under "Traffic Guidelines."

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Chief Operations Officer

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Engineer of Delivery

BOH-DEL:T&S:PJC:nw

Subject Index: Traffic Control  
Attachment

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### When to Use Pedestrian Signals:

Pedestrian signals are installed at locations where significant pedestrian activity is clearly evident. Evidence may include the following:

1. Sidewalks crossing the intersection.
2. Well trodden paths crossing the intersection.

While it may be desirable to provide separate pedestrian signal heads, there may be situations in which it is desirable to prohibit crossing certain legs of an intersection. For example, at an intersection with dual left turns and split phase signal operations, it is undesirable to allow pedestrians to cross the path of the protected, left-turning vehicular movement.

Unless there is a safety or operational concern, pedestrian signals will not be added to an existing signalized location until it is being modernized.

### How to Operate Pedestrian Signals:

Pedestrian signal timing is described in the "Signal Change Interval Guidelines." This includes the meaning of the indications, when they should be displayed, and how to calculate the time intervals.

Pedestrian signals are typically operated in one of two ways:

1. The pedestrian signals provide a walk interval every signal timing cycle.
2. The pedestrian signals only provide a walk interval if a push button is activated.

Push buttons should be considered on crossings where the minimum pedestrian clearance time required exceeds the time required for the concurrent vehicular phase. Push buttons may be used at intersections that otherwise operate on fixed time. Push buttons must be available for all pedestrian approaches in which the concurrent vehicular phase is actuated.

Push buttons should be located so they are clearly visible to pedestrians approaching the intersection, and should be signed so it is clear which crossing the push button is associated with. The push buttons should be located adjacent to the sidewalk such that a person with a disability can easily reach them.

### **Auxiliary Pedestrian Displays:**

Auxiliary devices are available to provide additional information to pedestrians. As they are not typically necessary, they will only be considered under the following conditions:

#### Countdown Pedestrian Signals:

A proposed research project will be conducted to determine guidelines for use of these devices. Until the guidelines for installation have been developed, the Michigan Department of Transportation (MDOT) will not install countdown pedestrian indications beyond those locations identified in the study area. If a local agency prefers to install these devices at intersections under MDOT jurisdiction rather than wait for the results of the study, they will be permitted to do so at their cost. The devices should be installed for all legs of the intersection that currently have pedestrian indications. These costs include design by a prequalified signal design consultant, purchasing the materials, installation of the device by a prequalified electrical contractor, and any subsequent maintenance required of the device. Prior to approving the installation, interested local agencies must submit a resolution which acknowledges the responsibilities listed above.

#### Audible Pedestrian Signals:

These devices provide audible information to visually impaired individuals. MDOT will install them in specific situations. The 2003 *Manual of Uniform Traffic Control Devices* (MUTCD) gives the following guidance:

The primary technique pedestrians who have visual disabilities use to cross streets at signalized locations is to initiate their crossing when they hear the traffic in front of them stop and the traffic alongside them begin to move, corresponding to the onset of the green interval. This technique is effective at many signalized locations. The existing environment is often sufficient to provide the information those pedestrians who have visual disabilities need to operate reasonably safely at a signalized location. Therefore, many signalized locations will not require any accessible pedestrian signals. If a particular signalized location presents difficulties for pedestrians who have visual disabilities to cross reasonably safely and effectively, an engineering study should be conducted that considers the safety and effectiveness for pedestrians in general, as well as the information needs of pedestrians with visual disabilities.

MDOT will consider audible pedestrian signal installation to provide crossing assistance at signalized intersections, but only where needed. To be considered for audible pedestrian signals, the location must first meet the following basic criteria:

1. The intersection must already be signalized.
2. A resolution from the local governmental agency requesting use of these devices is required. The local governmental agency must work with a mobility specialist to ensure the location is suitable for installation of audible pedestrian signals in terms of safety, noise level, and neighborhood acceptance.
3. There must be a demonstrated need for an audible pedestrian signal. The need is typically demonstrated through user request.

If the above criteria are met, MDOT will conduct an engineering study using the following criteria in determining the usefulness of the audible pedestrian indications.

The criteria to be considered are:

**Proximity to facilities with high vision impaired populations:** This includes schools for the blind; retirement centers; and medical, educational, social, and recreational facilities with known populations of visually impaired users. A population should only be considered if they routinely utilize the intersection in question.

**Proximity to transit stops:** Because many visually impaired people rely on public transportation, those signals in close proximity to a transit stop will likely experience higher use by visually impaired people.

**Proximity to alternate crossing locations:** If there is an alternate crossing location with audible pedestrian signals within close proximity, it may not be as necessary to install audible pedestrian signals at an intersection.

**Frequency of use:** The number of crossings refers to the average number of visually impaired pedestrians crossing per day.

**Visually impaired pedestrian crash history:** If there is a history of crashes involving visually impaired people, audible pedestrian signals may provide a safety benefit.

**Unusual intersection configuration:** Layouts that differ from a standard four-leg, 90 degree intersection may affect the ease or difficulty of crossing an intersection. Contact the Traffic Signals Unit to determine if an intersection should be considered unusual. By itself, left-turn phasing would not qualify as unusual.

**Width of crossing:** Wider crossings may impede visually impaired pedestrians' ability to cross an approach. The length of the crosswalk should be measured as detailed in the "Signal Change Interval Guidelines."

**Traffic volume:** Visually impaired people often use the sound of vehicles accelerating from a stop to determine when the walk interval starts. At low volume crossroads there may be intervals where there are no cars stopped at the beginning of the walk interval. As a result, audible pedestrian signals would provide information regarding the start of the walk interval. The lowest hourly approach volume from 7 a.m. to 6 p.m. should be considered.

**Mobility evaluation:** Local organizations providing support services to pedestrians who have visual and/or hearing disabilities can often act as important advisors to the traffic engineer when consideration is being given to the installation of devices to assist such pedestrians. Additionally, orientation and mobility specialists or similar experts or specialists also might be able to provide a wide range of advice.

Where installed, the system will be used on all legs of the intersection that currently have pedestrian signals.

To provide optimal operation of visual and audible signals, the devices will cycle only when a push button is activated.